

Remarks begin on page 7 of this paper.

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Currently Amended) A process for making a metal-polymer composite suitable for shaping into food and beverage container end panels and container bodies, comprising:

a. applying to a metal sheet a ~~coating~~ top layer comprising a fully polymerized or nearly fully polymerized polymer selected from the group consisting of polyolefins, anhydride-modified polyolefins, epoxies, and phenoxies; and

b. scissioning polymer chains in said polymer by irradiating said ~~coating top layer~~, wherein irradiating said top layer comprises directly exposing the top layer to radiation, wherein said irradiating is carried out at a sufficient energy and for a sufficient time to sufficiently embrittle said polymer in said ~~coating top layer~~ thereby to improve resistance of said ~~coating top layer~~ to feathering and angel hair formation.

2. (Original) The process of claim 1 wherein said metal sheet comprises a metal selected from the group consisting of aluminum alloys, steel, aluminum alloy-coated steel, and aluminum-coated steel.

3. (Original) The process of claim 1 wherein said metal sheet comprises aluminum alloy of the AA3000 or AA5000 series.

4. (Original) The process of claim 1 wherein said polymer comprises a polyolefin selected from the group consisting of polypropylene, polyethylene, propylene-ethylene copolymers, propylene-1-hexene copolymers, and mixtures thereof.
5. (Original) The process of claim 1 wherein said polymer comprises a polyolefin selected from the group consisting of polypropylene and copolymers comprising propylene and up to about 50 mole percent of a co-monomer.
6. (Original) The process of claim 1 wherein said polymer comprises a polyolefin modified with an anhydride selected from the group consisting of maleic anhydride, citraconic anhydride, itaconic anhydride, glutaconic anhydride, 2,3-dimethylmaleic anhydride, and mixtures thereof.
7. (Original) The process of claim 1 wherein said polymer comprises a polyolefin modified with about 0.5-20 weight percent maleic anhydride, based on the weight of the polyolefin.
8. (Currently Amended) The process of claim 1 wherein the step of applying the polymer ~~coating~~ top layer to the metal sheet comprises extrusion coating, roll coating, or laminating.
9. (Original) The process of claim 1 wherein the step of irradiating comprises irradiating at a dosage of about 2-20 megarads.
10. (Cancelled)

11. (Currently Amended) The process of claim 1 wherein said polymer in said ~~coating~~ top layer is fully cured before said step of irradiating.

Claims 12 – 14. (Cancelled)

15. (Original) The process of claim 1 further comprising d. before step a., conversion coating a surface portion of said metal sheet.

16. (Currently Amended) A process for making an aluminum-polymer composite suitable for shaping into container end panels having improved resistance to feathering and angel hair formation, comprising:

a. applying to an aluminum alloy sheet a cured polymer ~~coating~~ top layer comprising a fully polymerized maleic anhydride modified polyolefin, said polyolefin being selected from the group consisting of polypropylene and copolymers comprising propylene and up to about 50 mole percent of a co-monomer, thereby to form an aluminum-polymer composite;

b. scissioning chains in said maleic anhydride modified polyolefin by irradiating the cured polymer ~~coating~~ top layer on said composite, wherein irradiating the cured polymer top layer comprises directly exposing the top layer to radiation, wherein said irradiating sufficiently embrittles said polymer ~~coating~~ top layer thereby to improve resistance of ~~coating~~ the top layer to feathering and angel hair formation; and

c. shaping said composite into a container body or container end panel;

wherein step b. is performed before step c.

17 – 18 (Cancelled).

19. (Currently Amended) A process for making a metal-polymer composite suitable for shaping into food and beverage container end panels and container bodies, comprising:

a. applying to a metal sheet a ~~coating~~ top layer comprising a fully polymerized or nearly fully polymerized polymer selected from the group consisting of polyolefins, anhydride-modified polyolefins, epoxies, and phenoxies.

b. scissioning polymer chains in said polymer by irradiating said ~~coating-top layer~~, wherein irradiating said top layer comprises directly exposing the top layer to radiation, wherein said irradiating is carried out for a sufficient time to embrittle said polymer in said ~~coating top layer~~, thereby to improve resistance of said ~~coating top layer~~ top layer to feathering and angel hair formation; and

c. shaping said composite into a container body or container end panel;

wherein step b. is performed before step c.

20. (Currently Amended) A process for making a metal-polymer composite suitable for shaping into food and beverage container end panels and container bodies, comprising:

a. applying to a metal sheet a ~~coating~~ top layer comprising a fully polymerized or nearly fully polymerized polymer selected from the group consisting of polyolefins, anhydride-modified polyolefins, epoxies, and phenoxies.;

b. embrittling said polymer in said ~~coating~~ top layer, thereby to improve resistance of said ~~coating~~ top layer to feathering and angel hair formation wherein embrittling said polymer comprises directly exposing the fully polymerized or nearly fully polymerized polymer to radiation.